

Claims

1. A semi-enclosed gel system for release of volatile materials, wherein the
5 dimensions of the gel system, in the x, y, and z dimensions, are such that:

- a. $x_i / y_i > 1.5$, preferably > 2.0 , and most preferably > 5.0 ,
- b. $H_i / z_i > 2.0$, preferably > 4.0 , and most preferably > 5.0 ,
- c. $x_F / y_F > 2.0$, preferably > 5.0 , and most preferably > 20.0 ,
- d. $\frac{(A_D)_{\text{final}}}{(A_P)_{\text{final}}} / \frac{(A_D)_{\text{initial}}}{(A_P)_{\text{initial}}} > 0.19$, preferably > 0.4 , most preferably > 0.7 ,

10 wherein: A_D = Surface Area of the gel that is directly exposed to
ambient flowing air

A_P = Area available for permeation of vapors generated within
the enclosure

- e. $\frac{(A_D)_{\text{final}}}{(A_D)_{\text{initial}}} > 0.65$, preferably > 0.75 , and most preferably > 0.9 , and
- f. $\frac{(A_P)_{\text{final}}}{(A_P)_{\text{initial}}} < 4.0$, preferably < 3.5 , and most preferably < 1.5 .

20 wherein:

x_i = the longest dimension measured in the x direction of the projection of
the directly exposed region of the gel system in the x-z plane at the
initiation of volatilization;

25 y_i = the longest dimension measured in the y direction of the projection of
the directly exposed region of the gel system in the x-y plane at the
initiation of volatilization;

z_i = the longest dimension measured in the z direction of the projection of
the directly exposed region of the gel system in the x-z plane at the
30 initiation of volatilization;

H_i = the longest dimension measured in the z direction of the projection of
the entire gel system in the x-z plane at the initiation of volatilization;

x_F = the longest dimension measured in the x direction of the projection of

the directly exposed region of the gel system in the x-z plane at the end of volatilization;

y_F = the longest dimension measured in the y direction of the projection of the directly exposed region of the gel system in the x-y plane at the end of volatilization;

z_F = the longest dimension measured in the z direction of the projection of the directly exposed region of the gel system in the x-z plane at the end of volatilization; and

H_F = the longest dimension measured in the z direction of the projection of the entire gel system in the x-z plane at the end of volatilization.

2. The semi-enclosed gel system of claim 1, wherein:

a. the ratio of final to initial values of A_D is greater than 0.65;

b. the ratio of final to initial value A_p is less than 4.0; and

c. the aspect ratio of the cross-section of the gel is greater than 1.5.

3. The semi-enclosed gel system of claim 2, wherein said volatile material is selected from the group consisting of materials employed for air freshening, insect control, and odor abatement.

4. The semi-enclosed gel system of claim 2, wherein said volatile material is a fragrance.